

Radar Signal Generator

19" RACK MOUNT RADAR SIGNAL GENERATOR SYSTEMS

Ideal for creating a variety of scenarios for use in extensive training. Also ideal for receiver testing applications.

PORTABLE RADAR SIGNAL GENERATOR SYSTEMS

For use in field, maritime and other applications where portability is crucial

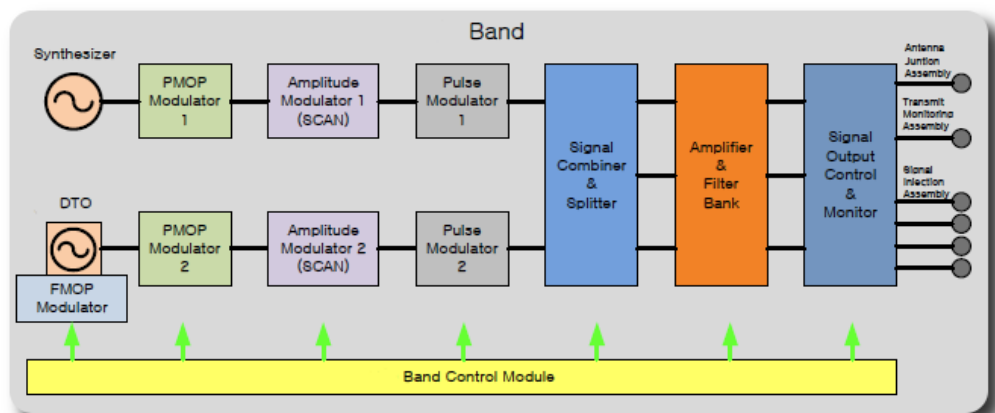
The transmit antenna and amplifier are integrated, which allows the simulator and the receiver being tested, to be placed in separate locations.



- Replicates real radar signal characteristics (Frequency, Phase, Pulse, Modulation, SCAN).
- Simulation Scenarios: AOA Simulation, Radar Activity, Virtual Missions.
- Ideal for Electronic Warfare training and Radar receiver testing.
- 19" Standard Rack Mountable and Portable models are available.
- Signal data library with up to 1024 entries.

AWT(G) Radar Simulators generate a variety of Radar Signals. The Simulators are ideal for radar receiver testing and in training Radar Operators on object detection, recognition and Electronic Warfare (EW). The simulators offer variety of simulation capabilities; including Radar Warning Receivers (RWR), Missile Warning Receivers (MWR) and other Electronic Warfare (EW) Receivers.

AWT's Radar Simulator can generate up to 128 simultaneous CW or Pulsed signals. An intuitive graphical user interface (GUI) makes it easy to program signal parameters. Geographic Information System (GIS) tools are also available (optional). The receiving band(s) are developed to customer specifications. They are available in the range from 0.5 GHz and 40 GHz.



Radar Signal Generator - Block diagram (single bank).
(Expandable to eight (8) banks in one simulator)

Simulator & Threat Software

SCENARIOS

AOA Simulation

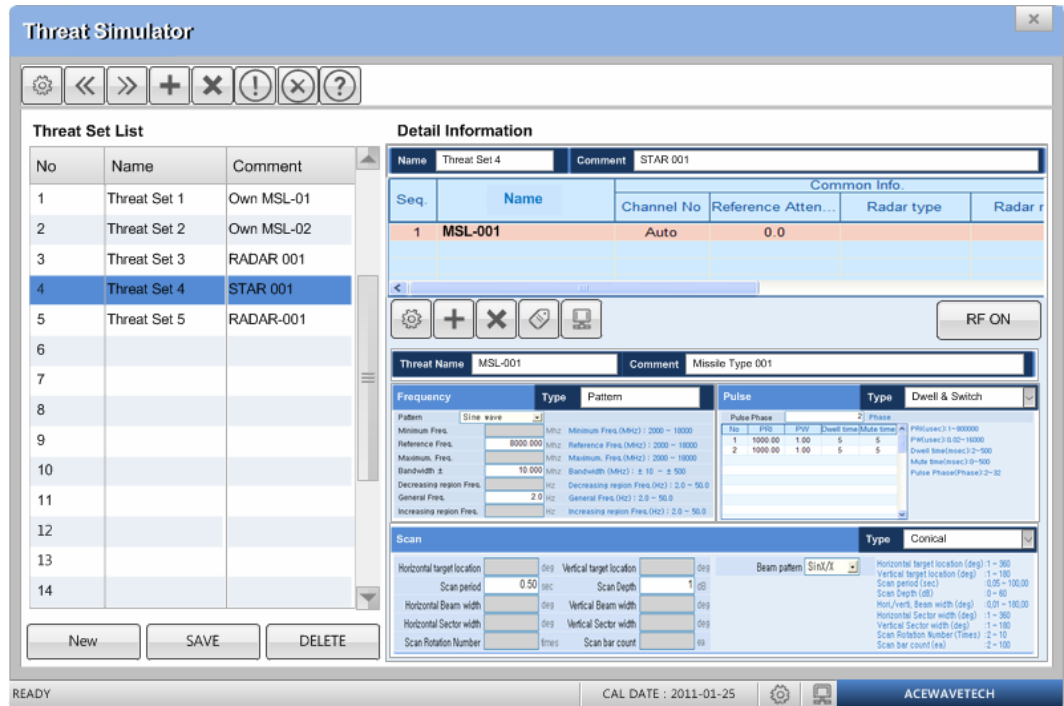
- DF test using Amplitude and Angle of the Antenna.
- Antenna pattern measurement
- Signal level change at scheduled time

Radar Activity

- Search Radars
- Acquisition Radars
- Tracking Radars

Virtual Missions

RF Signal Parameter Management software runs on Windows operating systems. RF signals are composed of frequency, pulse and SCAN characteristics. All parameters are editable in an easy to use and clearly laid out user interface.



The Editor Screen displays the configuration for a specific threat set. It includes a 'Threat Set List' table on the left and a 'Detail Information' panel on the right.

No	Name	Comment
1	Threat Set 1	Own MSL-01
2	Threat Set 2	Own MSL-02
3	Threat Set 3	RADAR 001
4	Threat Set 4	STAR 001
5	Threat Set 5	RADAR-001
6		
7		
8		
9		
10		
11		
12		
13		
14		

Detail Information

Name: Threat Set 4, Comment: STAR 001

Seq	Name	Channel No	Reference Atten...	Radar type	Radar r
1	MSL-001	Auto	0.0		

Threat Name: MSL-001, Comment: Missile Type 001

Frequency

Parameter	Value	Unit
Minimum Freq.	8000.000	MHz
Reference Freq. (MHz)	2000 - 18000	MHz
Maximum Freq.	10.000	MHz
Bandwidth	2.0	MHz
Decreasing region Freq.	2.0 - 50.0	MHz
General Freq.	2.0 - 50.0	MHz
Increasing region Freq.	2.0 - 50.0	MHz

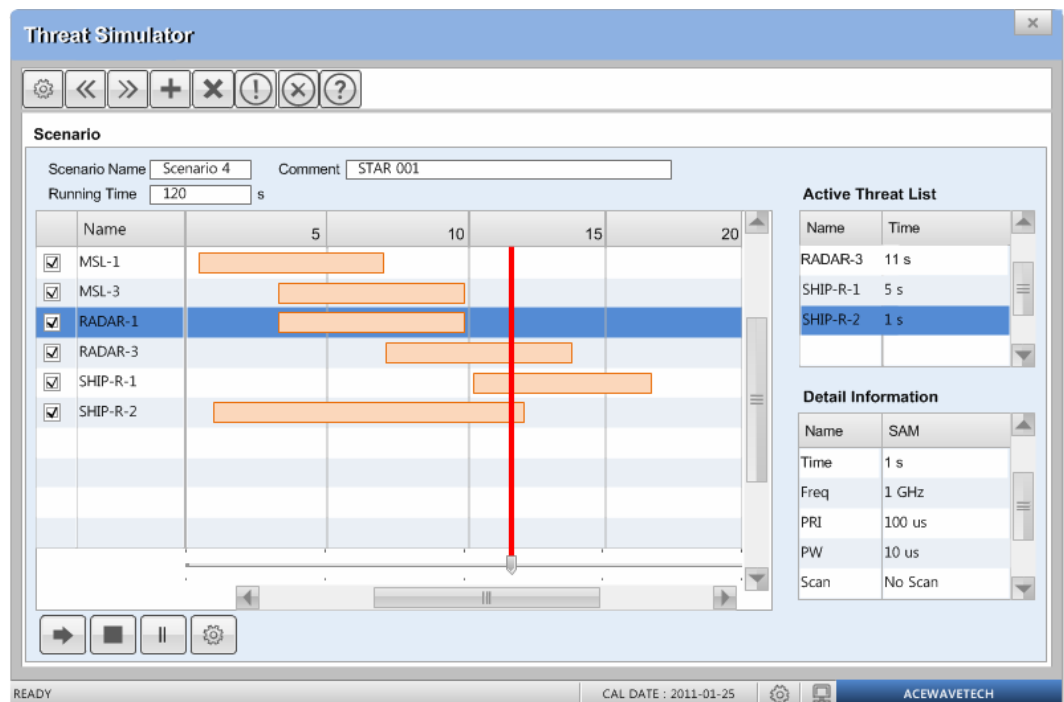
Pulse

No	PRI	PW	Dwell time	Mute time
1	1000.00	1.00	5	5
2	1000.00	1.00	5	5

Scan

Parameter	Value	Unit
Horizontal target location	1 - 360	deg
Vertical target location	1 - 180	deg
Scan period	0.05	sec
Scan Depth	1	dB
Horizontal Beam width	0.01 - 100.00	deg
Vertical Beam width	0 - 60	deg
Horizontal Sector width	0.01 - 100.00	deg
Vertical Sector width	1 - 180	deg
Scan Rotation Number	2 - 10	times
Scan bar count	2 - 100	ea

Editor Screen



The Threat Sequencer Screen shows a scenario timeline. The Scenario Name is 'Scenario 4' and the Running Time is 120 seconds. A Gantt chart displays the duration of various threats: MSL-1, MSL-3, RADAR-1, RADAR-3, SHIP-R-1, and SHIP-R-2. A red vertical line indicates the current time in the simulation.

Active Threat List

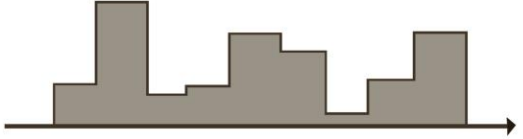
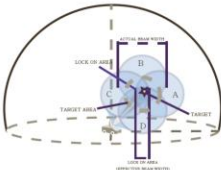

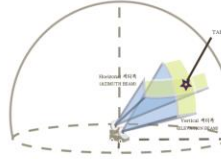
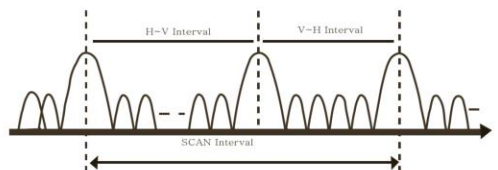

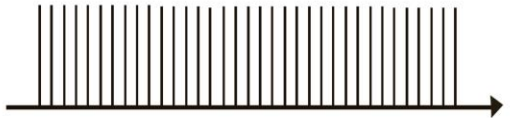
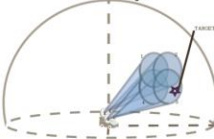

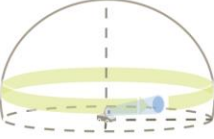
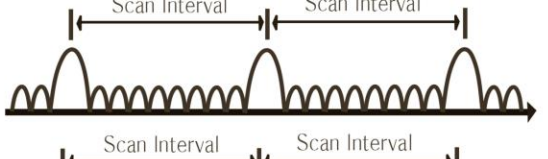


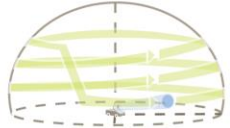
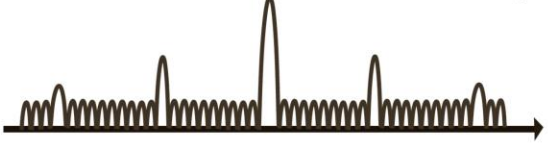
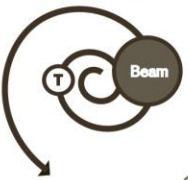


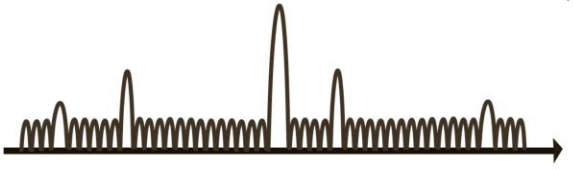


Name	Time
RADAR-3	11 s
SHIP-R-1	5 s
SHIP-R-2	1 s

Detail Information

Name	SAM
Time	1 s
Freq	1 GHz
PRI	100 us
PW	10 us
Scan	No Scan

Threat Sequencer Screen

Radar Scan Types

SCAN Type	Antenna Motion	Receiver Signal Strength
Electronic	Agile Beam	
Conical		
TWS		
Steady		
Lobe Switching		
Circular		
Sector		
Helical		
Spiral		
Raster		
Bi-Directional		

Specifications

PRODUCT QUALITY

AWT is committed to providing our customers with products meeting the highest quality standards. All AWT products undergo thorough quality checks and are ISO 9001 and ISO 14001 certified.

MORE INFORMATION

For more information about any of our products or services contact one of our sales offices and channel partners, or visit our Web site:
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Frequency	
Range	0.5 – 40 GHz (in customer specified bands)
NATO Bands	C, D, E, F, G, H, I, J, K
IEEE Bands	UHF (upper), L, S, C, X, Ku, K, Ka
Resolution	1 MHz
Accuracy	1 kHz (higher accuracies on request) 2 MHz (VCO or DTO)
Type	Fixed, Agile (Sinusoid, Saw-Tooth, Triangular, Rectangular, Random), Hopping (up to 256 /sec)

Pulse	
Type	CW, Stable, Jitter, Stagger (32 Steps), Dwell & Switch, Random
Width Range	0.05 – 225 us
Repetition Interval	1us – 1 sec (longer possible)
Density	Up to 1,000,000 pulses/sec (PPS)
FMOP	Linear, Non-Linear, (FM Bandwidth depends on PW, 40 MHz max)
PMOP Agile	Bi-Phase, Quadratic-Phase

Frequency Modulation on Pulse (FMOP)	
Pattern	Linear, Non-Linear, Chirp Up/Down
Agile	Sine, Triangular
Range	10 – 512 MHz
Accuracy	1 MHz

Phase Modulation on Pulse (PMOP)	
Pattern	Bi-Phase, Quadratic Phase
Change Time	< 50ns
Accuracy	better than 20°

SCAN	
Types	Electronic (Agile Beam), Conical, TWS, Steady, Sector, Lobe Switching, Circular, Helical, Raster, Bi-Directional, User defined
Rate	50ms – 10 sec
AM	0 – 40 dB

Output	
Number of RF Signals per bank	1 CW + 1 Pulse Doppler Signal or, 1 CW + 16 Pulse Signals, or 17 Pulse Signals
Ports per bank	1 Vertical Polarization, 1 Horizontal Polarization, 1 Monitoring
Power (signal)	> 15 dBm (other power levels on request)
Monitoring port	> 5 dBm (other power levels on request)

Communication Interfaces	
Ethernet (IEEE 802.3), USB, RS-232	

Dimensions / Weight / Environment / Electrical	
Dimensions	Depends on model and configuration
Weight	Depends on model and configuration
Power	110-240V +/- 10% Up to 30 minutes battery operation with maximal transmit power (portable instruments only)
Power Consumption	Depends on model and configuration



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